WITH PEN AND CAMERA

AT

..NIAGARA FALLS..

TEXT BY HOLMAN D. WALDRON

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THE FALLS OF NIAGARA.

NIAGARA, THE GRAND CATARACT, is without doubt the greatest natural phenomenon of America, if not of the world. No other attraction draws with equal force the tourist and pleasure-seeker. At all seasons and under all circumstances, with every varying effect of sunlight, moonlight or the dazzling glare of electric illumination, the scene is always sublime. The ceaseless monotone of its thunderous roar, the vast clouds of spray that catch in their depths the dancing sunbeams which transform them into the hues of a thousand rainbows, or imprison the moonbeams to form the beautiful lunar-bow, are never silent, never absent, and in the memory of hundreds of thousands who have witnessed it the grand display lives on.

Says Charles Dickens in his American Notes: "I think of it in every quiet season now; still do those waters roll and leap, and roar and tumble, all day long; still are the rainbows spanning them a hundred feet below; still, when the sun is on them, do they shine and glow like molten gold; still, when the day is gloomy, do they fall like snow, or seem to crumble away like the front of a great chalk cliff, or roll down the rock like dense white smoke. But always does the mighty stream appear to die as it comes down, and always from its unfathomable grave arises that tremendous ghost of spray and mist which is never laid; which has haunted this place with the same dread solemnity since Darkness brooded on the deep, and that first flood before the Deluge — Light — came rushing on creation at the word of God."

From the largest inland reservoirs of water on earth, the Great Lakes, Ontario excepted, draining with their numerous tributary streams an area of more than one hundred and fifty thousand square miles, flows the Niagara River — northward — through thirty-six miles of territory to connect Lake Erie with Lake Ontario. Through its channel and that of the St. Lawrence, which is the outlet of Lake Ontario, the Great Lakes find the sea.

Thus the Niagara River is one link in the chain which conveys the waters of Lake Superior to the Atlantic Ocean. It is no purling stream, but forms a mighty prelude to the cataract. From Lake Erie to the Falls its average depth is twenty feet, and at some points it is over two miles wide. At the point where it takes the plunge over the precipice this is narrowed down to 3,600 feet, or less than three-fourths of a mile.

The immense volume of water daily discharged over the Falls of Niagara has been variously estimated. Gauged by the velocity of the current and the depth of the river at a selected point, 1,500,000,000 cubic feet per minute has been named as the figure; another names 100,000,000 tons as passing through the Whirlpool — below the Falls — every hour. The ordinary mind is, however, most impressed by the estimate that 5,000,000,000 barrels go over every twenty-four hours: 211,836,853 barrels an hour: 3,536,614 barrels a minute: 58,343 barrels every second of time.

It is estimated that half a million tourists, apart from the passing throng, visit Niagara each season. For their accommodation are many mammoth hotels and every facility for the close inspection of every point of interest connected with the cataract. Since the approaches to the Falls passed, in the year 1885, from the hands of private individuals into the keeping of the State of New York upon the one side and the Dominion of Canada upon the other, free reservations have been maintained where bountiful Nature has been supplemented by a generous outlay of money upon the setting of this unrivalled gem of God's creation.

THE LAKESIDE PRESS, PORTLAND, MAINE.

GENERAL VIEW OF NIAGARA FALLS.

Between Lake Erie and Lake Ontario is a river distance of thirty-six miles and a fall of three hundred and thirty-six feet, which is made up as follows: To the Rapids above the Falls, fifteen feet; in the Rapids, fifty-five feet; over the Falls, one hundred and sixty-one feet; from the Falls to Lewiston, through the gorge, ninety-eight feet; from Lewiston to Lake Ontario, seven feet. The imaginary line of boundary between the United States and Canada is drawn through the centre of the Great Lakes and through the deepest channels of their connecting rivers. By this means over three-fourths of all the islands in the Niagara River, including all those upon the verge of the cataract, belong to the United States, and, as the deepest part of the river immediately above the Falls is in the heart of the Horseshoe Fall, America has the greater share of the famous cataract. Adjoining the cataract upon the American side is the city of Niagara Falls, New York State, with a resident population of fifteen thousand souls. A short distance down the gorge, at the terminus of the two railroad bridges, lies the American village of Suspension Bridge, corresponding to Clifton in Canada upon the other side of the gorge. Canada has no settlement of size upon its shore of the Falls, the land being occupied by the International Park.

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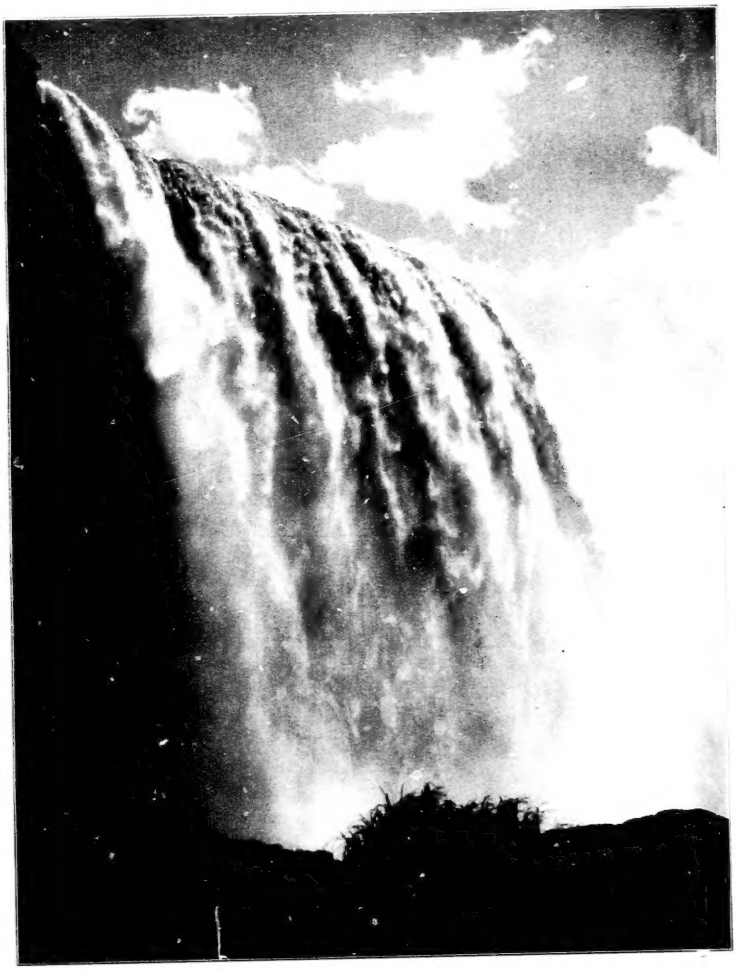

THE AMERICAN FALL.

The American Fall consists of the American and Centre Fall, divided by Luna Island. It is eleven hundred feet wide, nearly one-fourth of a mile, and its flood makes a sheer descent of one hundred and fifty-nine feet from the crown to the base of the precipice. Careful estimation places the volume of water passing over the American Fall at one hundred and fifty million cubic feet every minute of time. This torrent takes the plunge in a billowy sweep, but is caught by craggy points and thrown out at a hundred places in wild and singular beauty, an ever-varying irregularity, and which clothes its falling water in snow-white drapery, its peculiar charm. Its torrent is not so great, nor is its fall so far, as that of the immense volume of water which passes over the Horseshoe Fall, a huge amount of rock accumulated at the foot of the former reducing the descent, yet the most of interest centres about the American Fall, it is the easiest reached and the nearest approached. The parapet of Prospect Park is poised immediately above the brink of the cataract.

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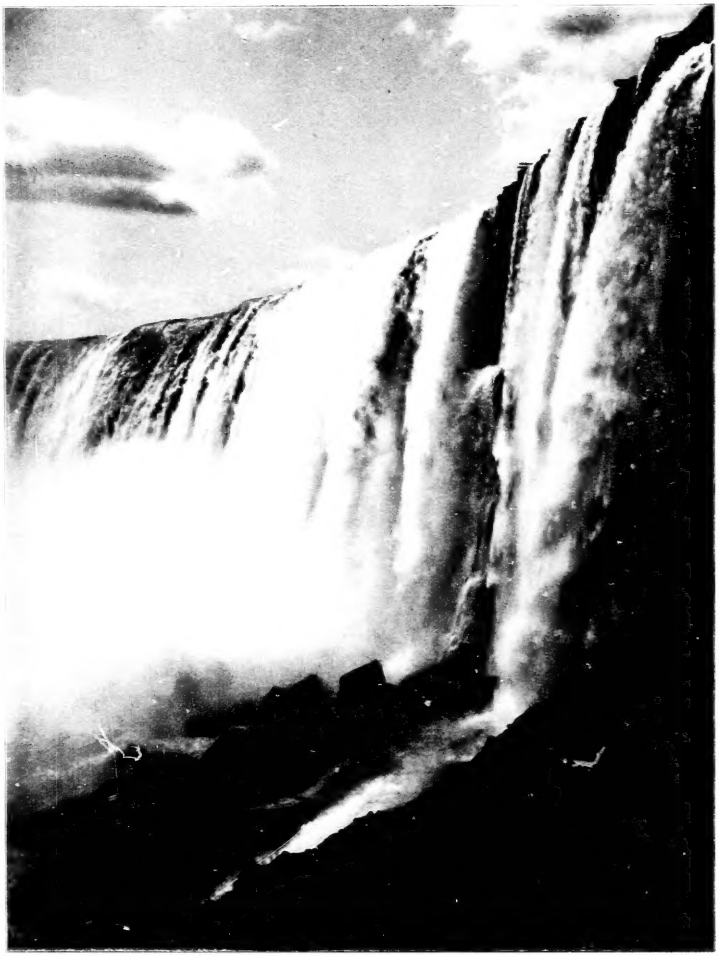

THE HORSESHOE FALL

The Horseshoe Fall extends from Goat Island to the Canadian shore, its width being estimated at 2,376 feet, and its perpendicular fall 165 feet. An enormous volume of water passes over this Fall, estimated at ten times the amount discharged by the American Fall. Full thirteen hundred and fifty millions of cubic feet go over every minute of time. The ordinary mind can best conceive of this figure by the fact that it rolls majestically over the brink in a solid wall twenty feet thick. At the angle of the Horseshoe it is particularly deep, and takes on a distinctively deep green color due to this fact. The fall of water is more even here than over the American Fall, and preserves a more compact form as it meets less of rock obstruction. It is [illegible] in the bend of the Horseshoe that the wearing away of the precipice, the receding of the Falls, at present most occur. Evidences are not wanting to show where immense slices of rock have fallen into the gorge, explaining the rugged pathway below. Within twenty-five years more than twenty feet in width and four hundred feet in length have gone down.

BENEATH THE CENTRE FALL—ROCK OF AGES.

One of the most artistic of Niagara views. To the right is the Centre Fall, descending from between Goat Island and Luna Island, the latter just appearing above the mists, and the long line of the American Fall disappearing in the perspective. Behind the Centre Fall lies the celebrated Cave of the Winds, formed by the gradual wearing away of the shaly substratum of the precipice by the ceaseless fall of water, leaving the more solid limestone rock projecting overhead some thirty feet from the base. Over this open cave, entered first by man in the year 1834, flows the mighty cataract. The cave is one hundred feet in height, one hundred feet in width, with a depth of sixty feet. It is a place of perpetual storm, occasioned by the tremendous pressure of the atmosphere. Clouds of spray, hurled with great violence along the floor of the cavern, meet the farther wall and ascend, combing like surf to the roof. To reach the cave one descends an enclosed staircase from Goat Island, where the perpendicular height of the bank is one hundred and eighty-five feet. Thence to the right a short walk reveals the entrance to the Cave of the Winds. Returning to the entrance of the cave a series of platforms and bridges enables one to walk out directly in front of the American Fall, and only forty feet distant. The roar and general tumult about this, the Hurricane Bridge, are very impressive. A large mass of detached rock at the foot of the Fall has been aptly named the Rock of Ages.

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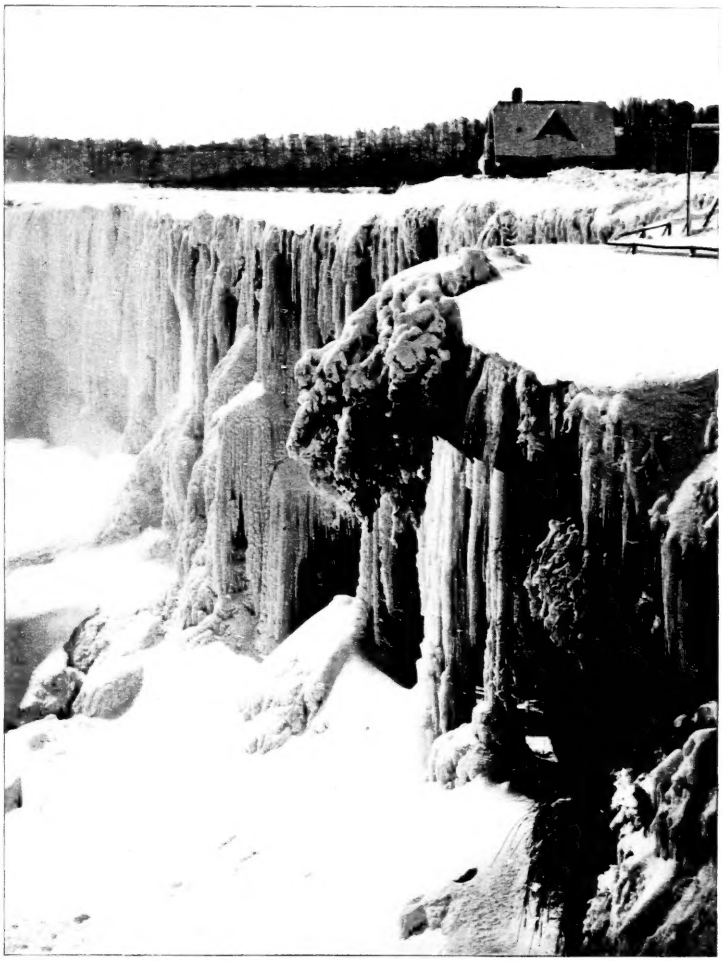

TABLE ROCK—WINTER

Table Rock formed one of the most famous outlooks upon Niagara previous to its fall in 1850. At its best it was a huge shelf of rock overhanging the precipice at the Canadian shore end of the Horseshoe Fall. Like Longfellow's village of Grand Pré, "Nought but tradition remains" of this famous pile. Large portions of it have fallen from time to time. In 1818 a mass one hundred and sixty feet long and forty feet wide broke away and fell into the river; and in 1828 three immense masses fell with a shock like an earthquake. Again, in 1829, another fragment fell; and in 1850 a portion two hundred feet in length and one hundred feet thick. On one of these occasions some forty or fifty persons had been standing on the rock a few moments before it fell. The work of demolition still went on, for another portion of Table Rock fell in 1857. In 1867, a large crack or seam having formed around it near the road, it was deemed unsafe and the Canadian Government caused it to be blasted away. Those who consider the contour of Niagara unchanged from year to year may take a lesson in the recedence of the Falls by this disappearance of Table Rock, one of its greatest features, all within the present century.

FROM PROSPECT POINT.

Prospect Point, the farthest extremity of Prospect Park, as the New York State reservation is called, rises directly above the brink of the American Fall and so near that one may almost dip his walking-stick in the flood as it takes the plunge. Danger of accident is averted by a handsome abutment of masonry, which extends along the edge of the gorge for some distance and is surmounted by an iron rail for farther protection. At no place on the globe may one look certain death more closely in the face, yet millions have visited this spot, including hosts of children, and there is no record of accident. Now and then a suicide makes a sensational leap from the parapet into the American Fall, never to be heard of afterward. The bodies of such unfortunates are either forced to a lodgment among the rocks at the foot of the Fall, or are carried by the under-current, which runs like a mill-race beneath the more sluggish surface waters, through the Whirlpool Rapids and the Whirlpool itself, to find a resting-place upon the banks of the lower river or be covered by the sands of Lake Ontario. Here, if anywhere, that uncanny inclination of the mind which impels one to leap into the flood may be felt.

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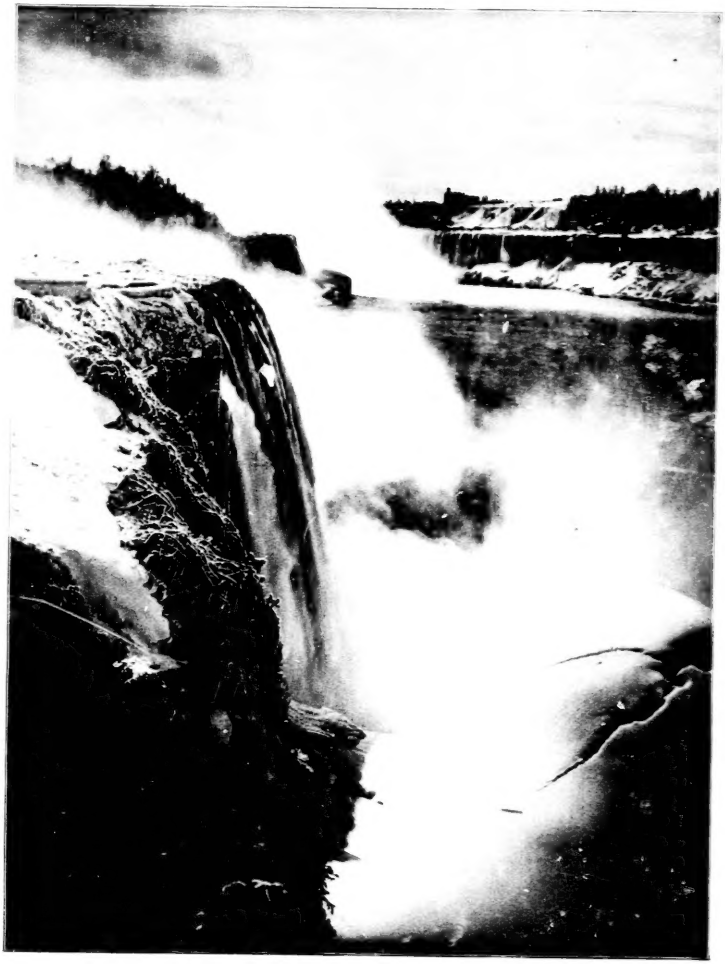
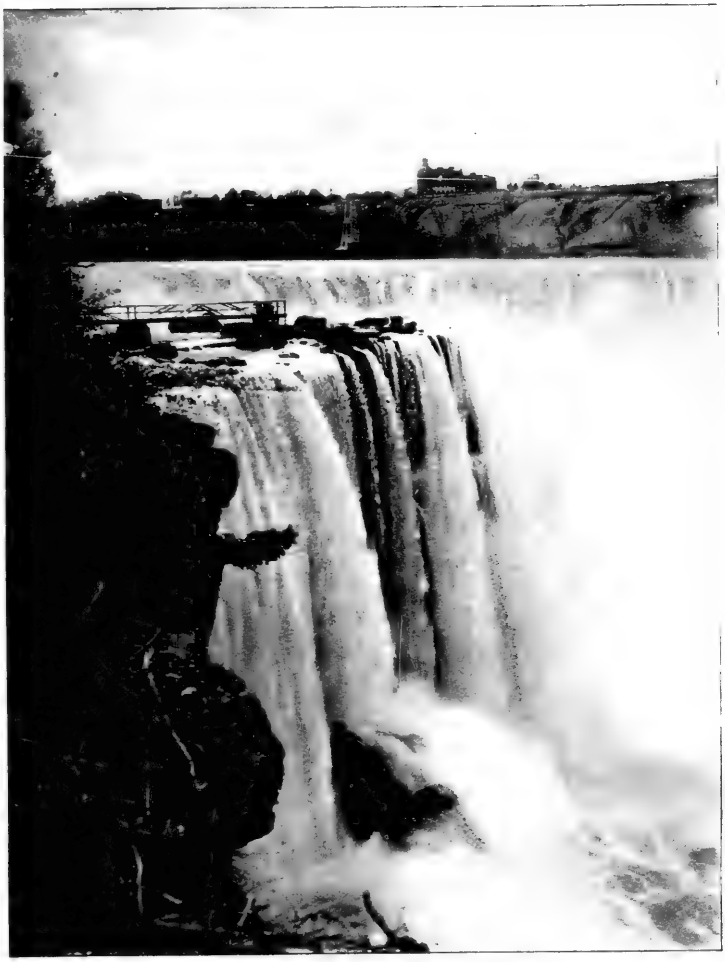


FROM PROSPECT POINT — WINTER

The view from Prospect Point in midwinter when the river and Falls are ice-bound, so far as the Frost King can chain the mad rush of the waters, is extremely beautiful; especially so when the sun lights up the scene with its splendor. Giant pendants of ice are draped from each projection of the beetling cliff below the outlook. The ice-mountain, formed by accumulated ice which has come over the cataract and the frozen mists, rises high in the foreground in front of the American Fall, and in seasons of extreme cold the ice-bridge forms from the base of the mountain far out toward the Canadian shore. It is like journeying through the shaft of a mine to descend to the bottom of the gorge by the inclined railway, but once there the midwinter scene cannot be duplicated on earth. At certain seasons giant blocks of ice from Lake Erie and from the Niagara River above the Falls come shooting this tremendous chute to fall in crumbling fragments among the accumulated mass at the foot of the ice-mountain.



THE HORSESHOE FALL, FROM TERRAPIN ROCKS

The Horseshoe Falls presents an entirely different aspect from the American Falls. Although by far wider and its descent greater, it does not, from this point at least, the appearance of power possessed by its rival, whose flood goes over in one grand discharge. Especially from Goat Island the Horseshoe Fall is disappointing, for at its edges it is ragged and weak. This is due to the fact that the waters are drawn toward the centre of the Falls. A collection of boulders, scattered upon the very brink of the Horseshoe Falls, bear the name of the Terrapin Rocks. Upon these rocks was built in the year 1833 the Terrapin Tower, to be condemned as unsafe and blown up in 1873. Niagara has a tower at present, the one on Falls Street, which is a marvel of construction and height. It is but one of those new departures and improvements which the present decade has inaugurated. The visitor who, twenty years ago, paid his half dollar to enter within the high board stockade which surrounded the entire display only saw the gem itself; to-day we see it publicly displayed and in a setting which magnifies its beauty.

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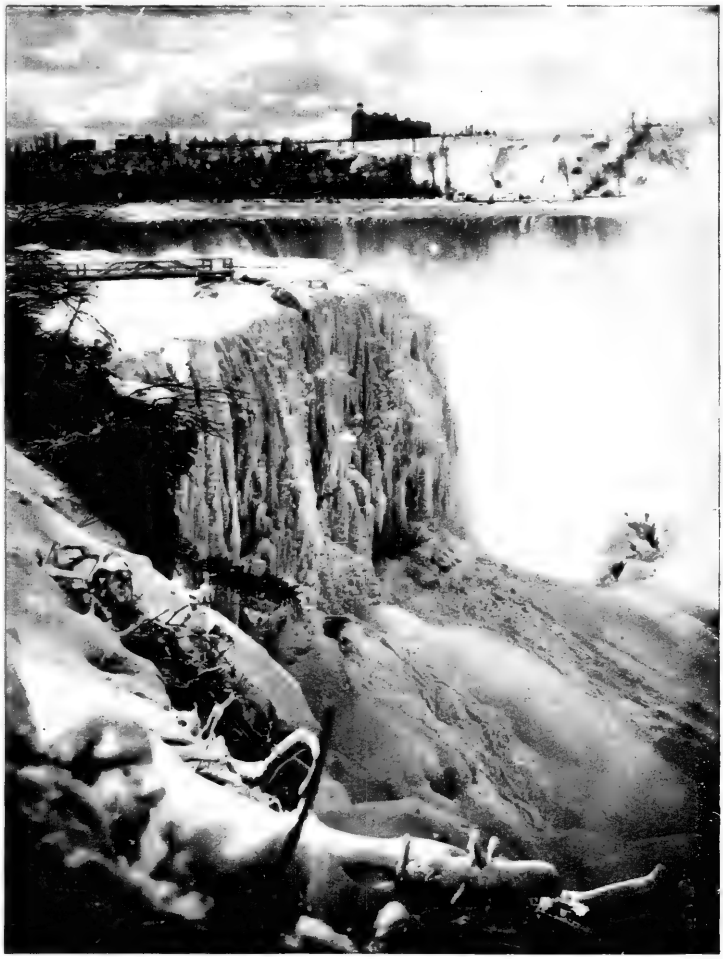
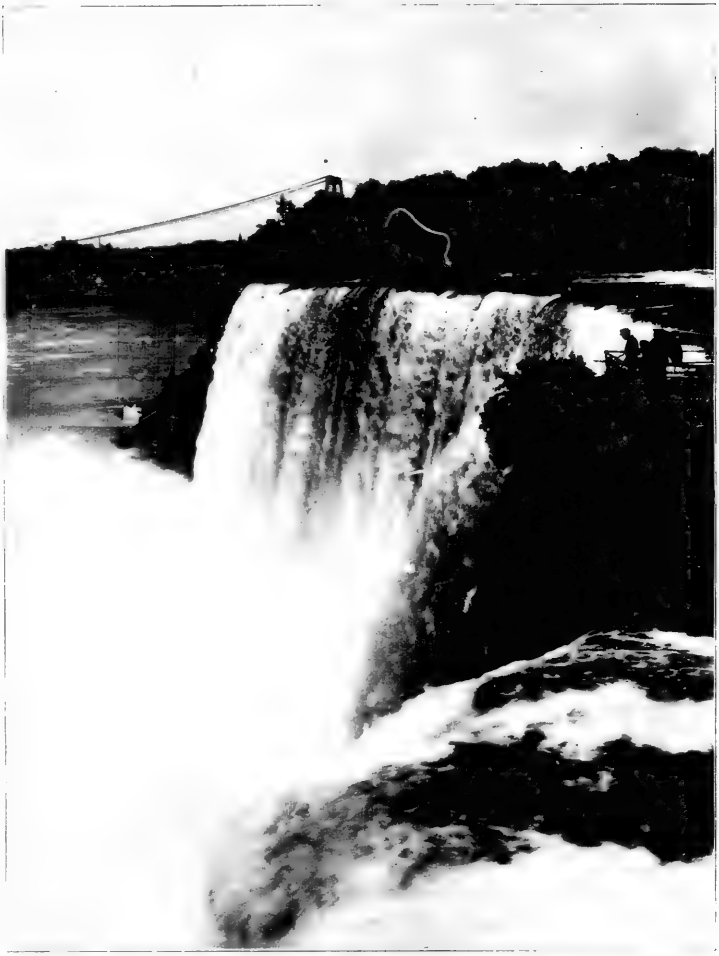


THE HORSESHOE FALL FROM TERRAPIN ROCKS WINTER.

In winter that characteristic of the Horseshoe Fall, the shaming of the sides toward the centre, becomes prominent as the ice forms upon the face of the cliffs below the Terrapin Rocks. The peculiar flow of the Horseshoe, nearly at a right angle to the American Fall, is also most apparent in this picture. There seems to be but little water tolling over the bank in the foreground. Persons have been swept to the verge and rescued from among the rocks thereon at this point—a feat impossible at any point where the river rushes over the precipice in its full strength. Sam Patch, that first of all high jumping cranks, was here in 1829 and made two successful leaps from an elevation of 97 feet into the river. There were no bridges spanning the gorge in those days, but a platform was built projecting out from the face of the cliff below the Terrapin Rocks, from which the inaugurator of that highly entertaining pastime leaped to fame; for fame was his surely, and his name became a household word in the United States a half century ago.



LUNA ISLAND, DIVIDING THE AMERICAN AND CENTRE FALLS

Luna Island literally hangs suspended upon the torrent's brink, and so delicately poised is it that many aver that the island trembles in the mighty flood. This statement is undoubtedly the fact, though heightened by the imagination. A bridge from Goat Island, the largest by far of the islands at the Falls, connects the two, crossing the stream which forms the Centre Fall. Carriages make the grand tour of Goat Island, but one must visit Luna Island on foot; its size is inconsiderable. Here protected by an iron rail from possible danger, one may dip the hand in the torrent as it leaps to its plunge. Beware, however, how you venture, one of the most distressing of Niagara's tragedies occurred on Luna Island. On June 21, 1856, a family party from Buffalo were making a tour of the Falls. When about to leave Luna Island, all in fine spirits, a young man of the party, while romping with a little daughter of his host, caught her in his arms and advancing to the water's edge exclaimed, "I am going to throw you in." The child in struggling to escape was precipitated into the water, the young man with a wild cry sprang to save her and immediately both were swept over the Fall to instant death.

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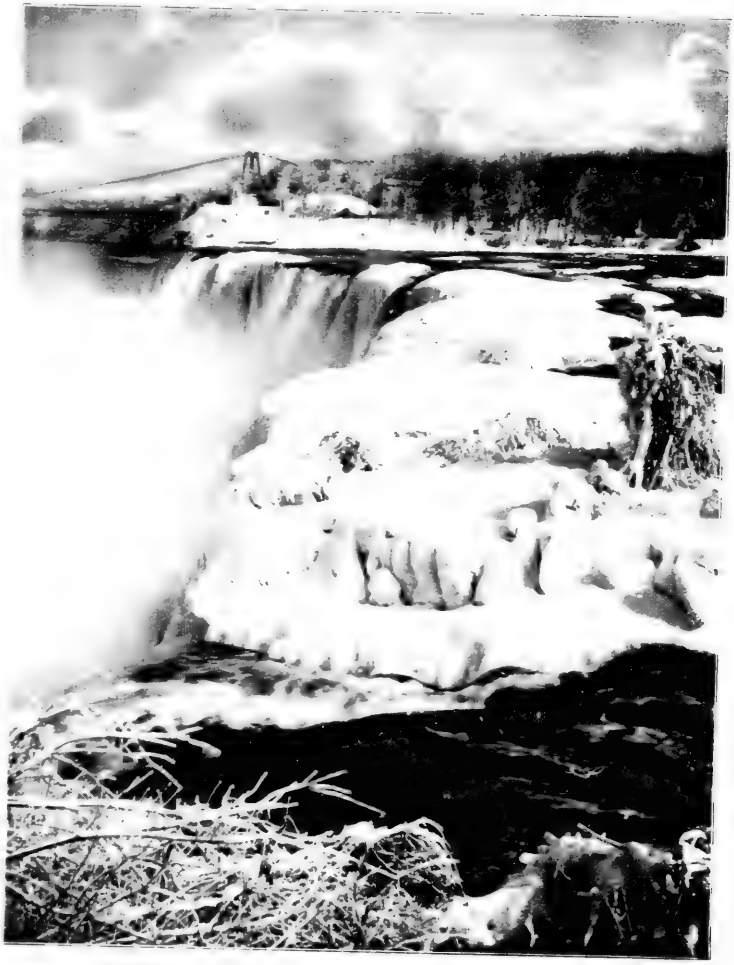
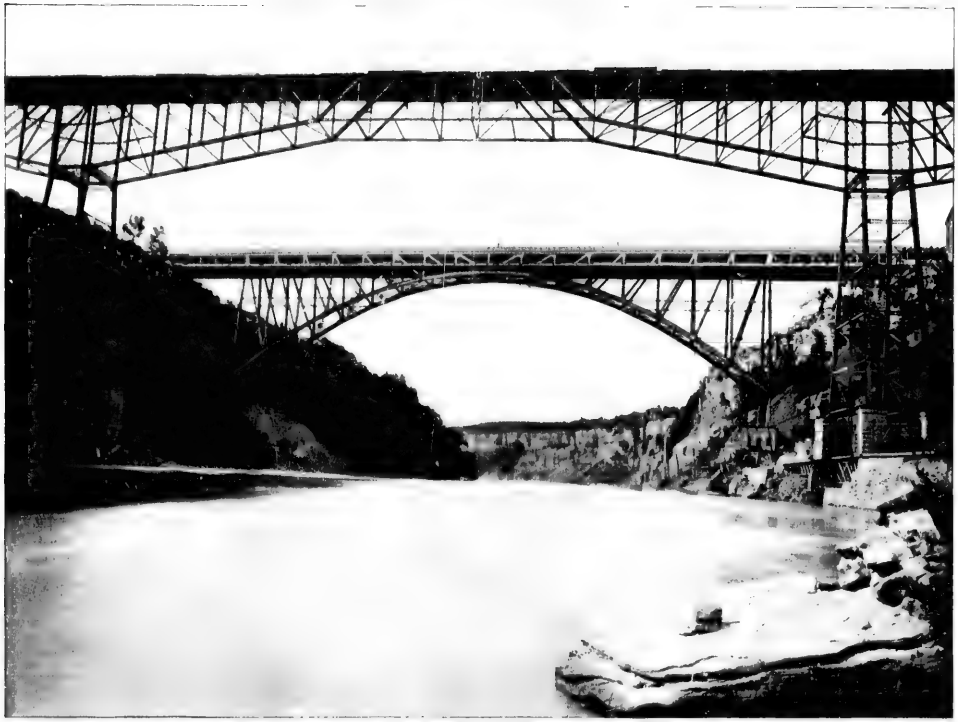


LUNA ISLAND DIVIDING THE AMERICAN AND CENTRE FALLS WINTER

To vast number who have visited Niagara the name of Luna Island is familiar from the frequency with which its most famous pictures show winter foliage upon this wonderful little isle. Bathed as it is in the spray of the cataract, the Luna Island makes a fine special playground. The falling mists are congealed upon tree and twig, rock and bridge timbers, ever accumulating to swell them to undue proportions. It is beautiful under any conditions, but especially brilliant when the sunshine adds to the display. In the foreground of this picture one sees the dark waters of the Centre Fall hurrying toward the bank. Further on is Luna Island, then the American Fall, crowned with ice, and followed in perspective by Prospect Park, with scattered visitors showing black against the dazzling whiteness of the winter landscape. By comparison one will readily perceive that this is taken from the same point as the picture upon the opposite page, one showing the summer and the other the winter scene.

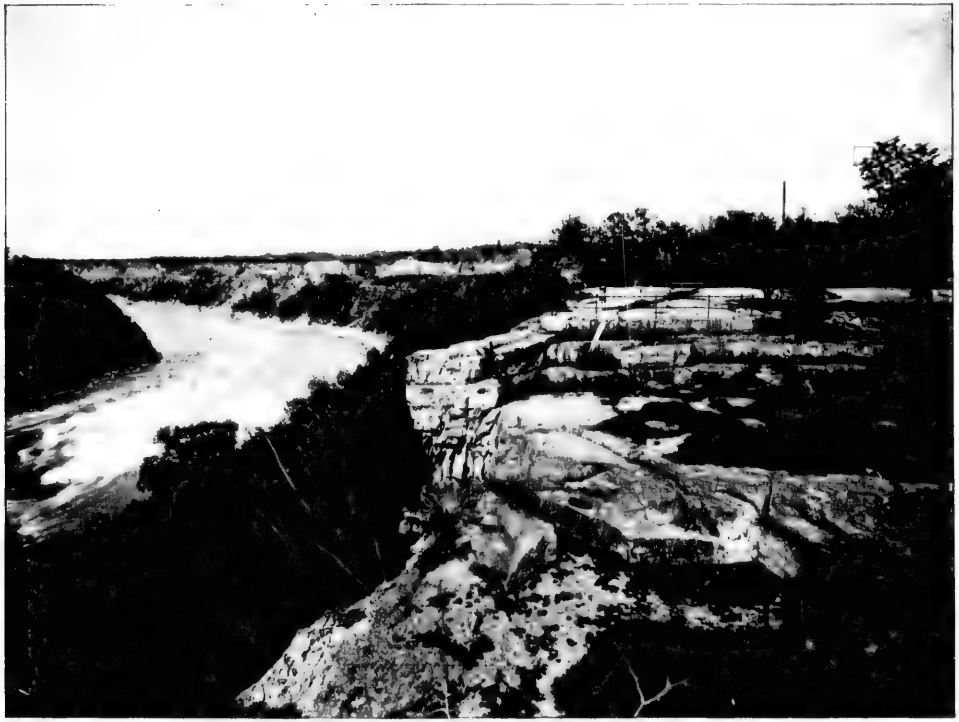
THE RIVER BELOW THE FALLS.

The river below the Falls flows through a gorge it has itself excavated during the infinite years that have elapsed since it began its retrograde movement, at Queenston, seven miles below the present cataract. After passing the Falls the river narrows rapidly and takes an abrupt turn to the right. The gorge varies in width from two hundred to four hundred yards, and corresponds in depth to the surface of the river with the height of the Falls. Between the Falls and the Whirlpool Rapids the depth of water varies from seventy-five to two hundred feet. The United States Geological Survey have made soundings to as near the Whirlpool Rapids as they dare go, finding constantly increasing depth of water, until one hundred and seventy-nine feet was reached and that some distance above the head of the rapids. At the Whirlpool Rapids it is estimated at two hundred and fifty feet, and in the Whirlpool four hundred feet. This represents the depth of water alone. The accumulation of stone, gravel, shell and debris, which during countless years have fallen into the gorge, lie above the original bottom, which would be but for these as deep again. The bridge above is the suspension foot-bridge, connecting the two International parks.



THE BRIDGES ACROSS THE GORGE, AT SUSPENSION BRIDGE

Much of the railroad traffic on the north side of the Great Lakes converges at this point, where the gorge of Niagara is narrowest. Here the old name, Suspension Bridge, still clings, although that famous structure, which was numbered in its day among the wonders of the world, has given place to the mere modern steel arch bridge of the Grand Trunk Railway. Just above this bridge is the steel cantilever of the M[illegible] Central Railroad, both crossing the chasm side by side. The two principles of bridge-building are well illustrated in our picture. In the year 1858 the old Suspension Bridge was opened to the public and to railroad traffic; none of the modern means of construction were then understood, and the engineers carried the first cable across the gorge by a kite. In fact 'twas but a kite-string, yet it grew into a structure that awed the American citizen of forty years ago; but now, the statement that there were 9,000 miles of wire in the four supporting cables elicits no especial remark. The chasm here is 859 feet from bluff to bluff. Below the tracks flows the river, 246 feet sheer down. Crossing these bridges there is much freight traffic, the tops of the box cars rising above the guard rails. It is a thrilling sight to witness brakemen passing at a run across the tops of cars in transit, evidently regardless of the foaming Whirlpool Rapids directly beneath



THE GORGE BELOW THE FALLS—THE DEVIL'S PULPIT.

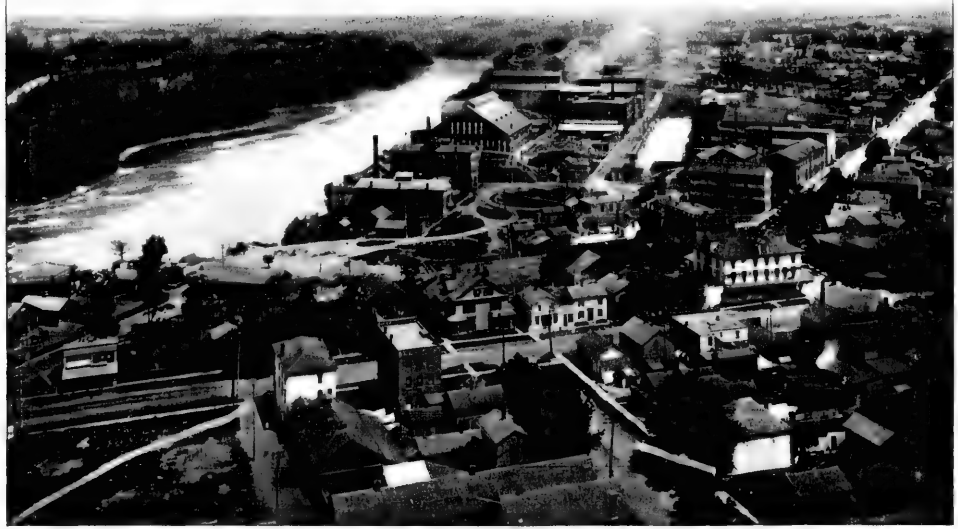
The historical page of Niagara is a record of blood. One of the most sanguinary engagements was fought at this point, three miles below the Falls, where a mammoth rock known as the Devil's Pulpit projects out over the gorge below, rising 300 feet above the water. Over this towering precipice pours a stream of water still called the "Bloody Run" from having been dyed with the blood of the victims of this tragedy. Here it was that a supply train of the British army was halted one bright September day in the year 1763 to allow the soldiers of the escort to enjoy the noon hour amid the grand scenery of the gorge. Here they were attacked by a band of Seneca Indians, allies of the French, who lay in ambush. The redskins closed in upon the unarmed men before they could regain their muskets and drove them off the precipice or murdered them with the tomahawk, until of the entire party of two hundred souls but three escaped. The commander of the wagon-train, mounted on a fleet horse, roused in pursuit a detachment of soldiers who were in camp at Lewiston. These marched to the relief but met a like fate, only eight escaping massacre

THE "DEVIL'S HOLE" AND "AMBUSH ROCK"

From the Devil's Pulpit a winding stairway now leads into the ravine below and a narrow walk along the face of the rocks takes the visitor to the Devil's Hole, a cleft in the rock thirty feet deep. In front of the opening stands a large boulder called Ambush Rock, and which at one time covered completely the mouth of this retreat. The interior of this cave appears to have been roughly excavated, and by some the work has been attributed to a prehistoric race. Also it is said to have at one time extended for three-fourths of a mile into the rock and to have been explored often to that distance. Heavy blasting operations in the vicinity have closed all but the present opening. Nearby the famous Bloody Run is lost among the rocks, yet to this day relics of the battle of a century and a quarter ago are often found in the ravine and bed of the stream.

THE OVERLOOK TOWER, NIAGARA FALLS, NEW YORK

The Overlook Tower at Niagara Falls, which from its commanding presence has been caught by the camera in several of our views, stands just outside Prospect Park on the American side. It is a structure of very recent completion, a strong, web-like erection of steel, three hundred feet in height. Two passenger elevators run from the street to the top, besides which there is a staircase if one prefers. The visitor to the top of the tower stands three hundred feet above the brink of the Falls, and four hundred and ninety feet above the surface of the river directly beneath the foot suspension bridge, which hangs one hundred and ninety feet above the water. For purposes of comparison it is interesting to reflect that, high as seems the tower, and high the Falls, both together do not equal the height of the National Monument to Washington (550 feet by sixty feet). The camera has caught a series of views from the top of the Overlook which are next presented. They do not, however, reveal the more distant objects which are visible from that lofty view-point.



FROM THE OVERLOOK TOWER - LOOKING NORTH

The view north from the tower embraces the milling district of Niagara Falls, New York. These mills stand upon the very edge of the gorge, and in their rear appear the waters of the sorage canal which furnishes their water-power. The elevation of the mill-sites does not appear here satisfactorily, but in another of our views, showing the milling district from the river, the torrents of water from the various tail-races show to advantage the plan of the water-power furnished by this canal. Here the surface of the river is shown all streaked with foam from its late plunge over the Falls. Just below the bend in the stream, shown in the middle distance, the river breaks into the tumult of the Whirlpool Rapids. Across these rapids are stretched the two steel railroad bridges. All points of interest about the grand cataract are within easy distance from the principal hotels, and one who was familiar with the vicinity a decade ago will be agreeably surprised by the present facilities for getting about.

FROM THE OVERLOOK TOWER. LOOKING EAST

The view east from the tower is over the residential part of the city. Thus the camera has covered every point of the compass and our views from this elevation have presented a complete cyclorama. Niagara Falls, New York, is a city of remarkable growth. The city formerly gained its prestige from its remarkable cataract, but of late it has won renown also as a manufacturing centre. Every branch of business established during the past fifteen years has been obliged, by increased demand, to double its capacity. These establishments are among the most prosperous in America, results largely due to the great superiority of the power and the unexcelled shipping facilities at their command. The railroad companies have been watchful of the rapid growth of the manufacturing interests, and railroad sidings have been laid to every mill door. Twenty-seven thousand carloads of mill freight are now handled every year. As a railway and shipping point Niagara Falls is destined to be unexcelled. Situated midway between New York and Chicago, in the in-transit and trans-shipment trade, where extraordinary dispatch is required, Niagara ranks sixth as compared with the twenty-four principal customs districts. It has a great future in store for it.

FROM THE OVERLOOK TOWER – LOOKING SOUTH.

A view from the tower looking south shows the upper Niagara River and its great breadth above the Falls. It shows also where the waters first break into rapids opposite the head of Goat Island, and at the extreme right of the picture the point of that island itself. Here are the two largest hotels upon the American side of the river, the Cataract House and the International Hotel, whose windows overlook the American Rapids and Prospect Park. The road in the foreground leads to Goat Island Bridge. Twenty miles away in this direction lies the great city of Buffalo, New York, the river flowing from south, to north between the two great lakes, Erie and Ontario. During the summer season many excursion steamers descend the river from Buffalo to Chippewa, a village on the Canadian shore where sight-seers complete the tour of Niagara Falls by trolley cars over the Niagara Falls Park & River Railway, which extends along the gorge to Queenston, a distance of fifteen miles. The two hotels here prominently shown have ample accommodations for one thousand guests, and during the height of the summer season their capacity is fully tested.

FROM THE OVERLOOK TOWER - LOOKING SOUTHWEST

A peculiar view this — to be obtained from the observation tower overlooking the Falls. In the foreground is Prospect Park, with its numerous buildings peeping from among the foliage. To the left is the American Fall, but one sees only the quick water at the verge, too quick to be caught by the camera, and the line which marks the plunge. From this point of view the observer will be able to note the recession of the American Fall, which will be seen to now assume the horseshoe shape. Sir Charles Lyell says: "According to a statement of our guide in 1841, an indention of about forty feet has been produced in the middle of the ledge of limestone at the lesser (American) fall since the year 1815, so it has begun to take the form of a crescent. Goat Island has lost several acres, and I have no doubt that this waste neither is, nor has been, a temporary accident." One also may note here that the river is now at work excavating a gorge almost at a direct right angle to its former course, as indicated by the rocky walls upon the Canada side.

IN PROSPECT PARK, NEW YORK STATE RESERVATION

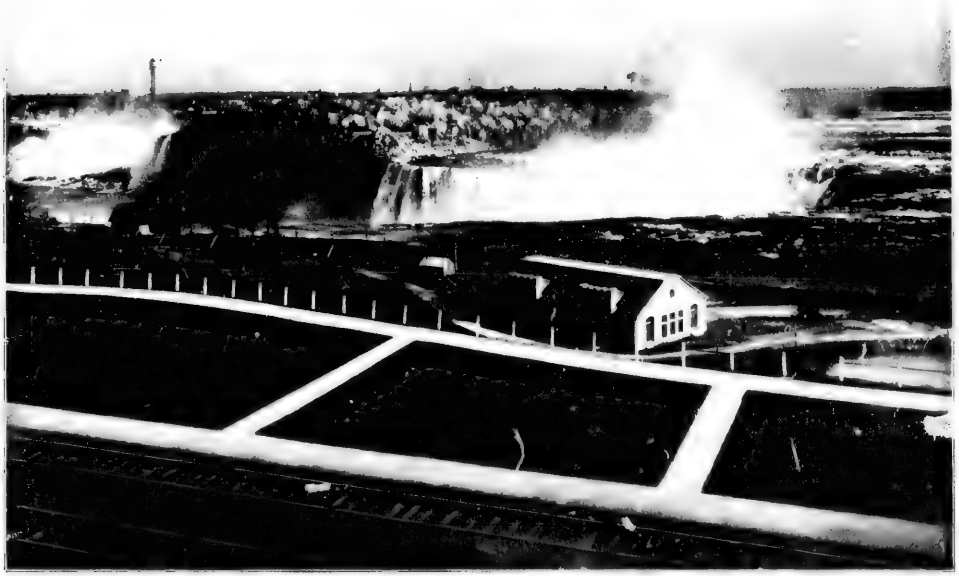
Prospect Park embraces some twelve acres and is situated within the village of Niagara Falls, New York. It is a state reservation free to the people without restriction. This reservation reaches from the suspension foot bridge below, to the shores and islands above the Falls, taking in a narrow strip upon the river bank extending for some two and one half miles and includes all lands below as well as above the precipice. With its pavilions, walks, fountains, greensward, shrubs and foliage trees Prospect Park is made a model picnic ground or loungers' paradise. Just above Prospect Point, and within the Park, is "Hennepin's View." This is one of the best general view points possible. Father Louis Hennepin was the priest and historian who, with the expedition of Chevalier Robert de La Salle, in 1678, ascended the St. Lawrence, established a trading post at the mouth of the Niagara River, visited the Falls and launched the first vessel that ever sailed the Great Lakes. Hennepin published the first description of Niagara in his "New Discovery," 1697. All approaches to Niagara Falls were, previous to 1885, owned by private individuals, who exacted tolls for any view. In that year the State of New York purchased all rights and opened their National Park, an example that was followed soon after by the Dominion of Canada upon the opposite shore.

PROSPECT PARK WINTER FOLIAGE

An act to authorize the selection, location and appropriation of certain lands in the Village of Niagara Falls, for a State Reservation, and to preserve the scenery of the Falls of Niagara," was introduced into the Legislature of the State of New York, passed, received the approval of Governor Grover Cleveland and became a law on April 30, 1883. The commission appointed to select the necessary lands chose some 107 acres in the immediate vicinity of the Falls, the property taken embracing all of Goat Island and the adjacent islands, Prospect Park, from the brink of the cataract to the new suspension bridge down river, also a strip of land extending up stream from Prospect Park to Port Day, bordering the Niagara River and containing the buildings which marred the beauty of the natural scenery. The appraisers of this property made awards to property holders amounting to $1,433,429.50. The State Reservation at Niagara was opened to the public July 15, 1885. The Victoria Park, upon the Canadian side of the river, has an area of 154 acres was opened three years later and awards were made to the amount of $136,813.24. What Nature had done for Niagara has thus been wisely supplemented by the action of two great commonwealths. Undesirable buildings near the Falls have been removed, walks and drives provided, and the cataract upon each side is now environed by most beautiful natural parks

UPPER RAPIDS AMERICAN SIDE

From the shores of Goat Island, above either the American or the Horseshoe Fall, the view enables one to comprehend the breadth of the river, the great sweep of the rapids; the white crests of the waves ever coming out from under a cloud-flecked sky. All the foreground is in bright sunlight, dancing, sparkling, leaping, hurrying on, converging to the angle where the water becomes a deep emerald, at the brink and plunge. The rapids above, upon either side of Goat Island, are a series of shelves bristling with jutting rocks, and the wildness of the scene is intensified by the rugged fringe of trees upon the shores. Here is the finest view of the upper river. To one standing on the outmost of the Three Sisters Islands the great flood seems tumbling out of the sky, but close to the shore of the island the waters are shallow and there are numerous eddies, and places where one might step in and not be washed away



FALLS VIEW STATION, CANADA, ON THE LINE OF THE MICHIGAN CENTRAL RAILROAD

The trains of the Michigan Central Railroad between Buffalo, New York, and Detroit, Michigan, cross the gorge of [illegible] upon that company's own steel cantilever Suspension Bridge [illegible] and stop to allow the passengers one of the finest views of the Falls to be obtained at any point. Falls View Station, on the Canadian side, is the [illegible] and directly opposite the "Heart of the Falls." One may from this sublime view point watch the entire [illegible] of the Falls, but the most interesting stream is the horse-shoe, where the waters gather to take the plunge, seeming to pause [illegible] and accumulate into volume, and which lighted by the sunshine, discovers a beautiful sea-green color quite beautiful to see. Here one will note that the name "Horse-shoe" given to this Fall from its resemblance, is first becoming a misnomer. It now more closely resembles the letter V inverted. The recession of this Fall is very rapid, and those who have known Niagara for from twenty-five to fifty years notice a very material change. The change of form has caused the greater volume of water to be attracted to the centre, and it is thus being gradually changed from the series [illegible] the recently announced theory that expansion of compressed air occurs regularly and frequently beneath the cataract, and occur most frequently beneath that point where the greatest thousands of tons, may account for the rapid recession of the Falls at this point.

BIRD'S EYE VIEW OF GOAT ISLAND AND AMERICAN RAPIDS

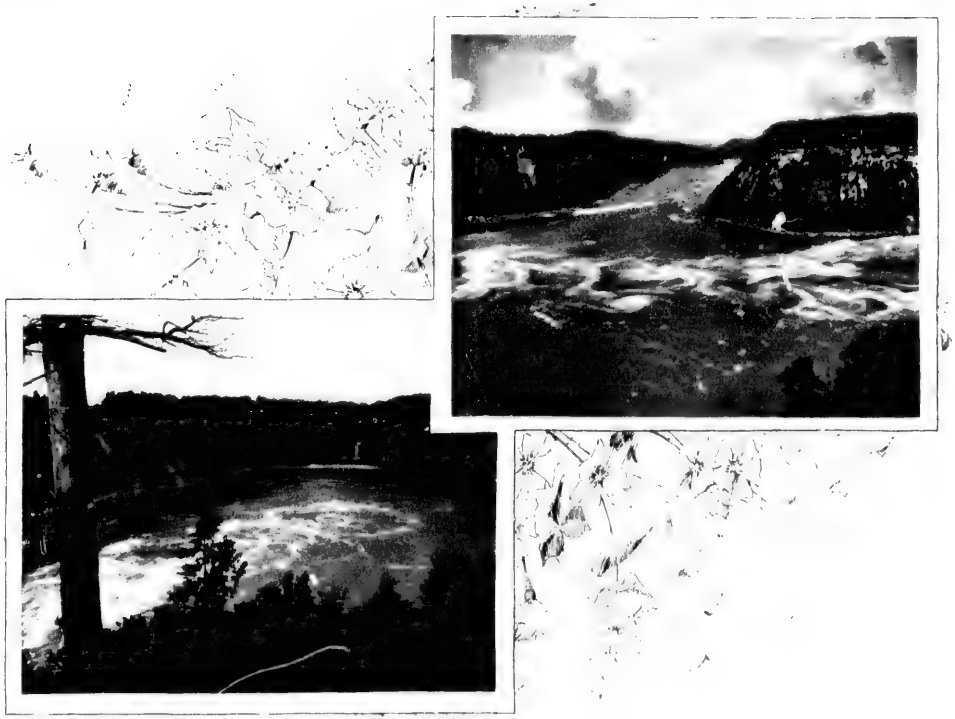
This bridge across the rapids from the American shore to Goat Island, which has all the appearance of two arches, is the longest single span to Goat Island. It is used for carriage and foot passengers. The Cataract Railway of the reservation crosses the bridge and makes the round trip of Goat Island and the Falls before returning. Goat Island contains sixty-two acres of wooded grounds. Upon the shore side of Bath Island are the grounds of the Cataract Hotel, the only hotel on all approach to the two islands at night. In the river above and below Bath Island are other Islands, Luna, those above called Ship and Bare, in a tangled resemblance to a fleet of thirty ships, and below, Blackbird, Crow, and Robinson's Islands, to which, to the west, Luna, Bath, and the Brink. When the State of New York acquired possession of the reservation one of the first papers in minute form of American occupied Bath and Nothing more aptly illustrates the spirit of preservation of Niagara than the demolition of a moving piece of property by the state on the [illegible]

THE AMERICAN RAPIDS.

The river, flowing each side of Goat Island from its head to the verge of the cataract, descends fifty-five feet in one-half mile upon the Canadian, and forty feet in the same distance upon the American side. It breaks into rapids the entire width from shore to shore immediately upon reaching the head of the island, increasing its speed from seven to thirty miles an hour. The view from the bridges forms a scene which must wake enthusiasm in the breast of the most *cumbed* type of humanity. The massive breast of water is seen hurrying on to its final plunge over the dread precipice, whose rounded edge is, but a few yards farther down, a maddened, tortured flood broken into foaming billows, until they meet the verge of that magnificent steep which hurls them into the boiling caldron below.

THE UPPER WHIRLPOOL RAPIDS

Beneath the railroad bridges, which for obvious reasons are placed at the narrowest point of the gorge, flow the famous Whirlpool Rapids, gathering in strength and fierceness until the culmination of the whole is reached in the boiling caldron of the Whirlpool itself, some three miles below the Falls. At the rapids the river flows through the contracted walls of the gorge, and the waters are compressed into such limited space that they leap aloft in angry billows twenty to thirty feet above the river level. As far as the eye can reach the river is tossed into a surging, struggling mass of foam-clouded billows whose noise of conflict is deafening, racing onward, impelled by the enormous backing of the united waters of Lakes Superior, Michigan, Huron and Erie, taking a descent of one hundred feet to the mile, in depth estimated at three hundred feet, through confining, rocky walls but three hundred feet apart, and at a speed of twenty-seven miles an hour. Fierce as are these waters, the original "Maid of the Mist," a steamboat of one hundred and seventy tons, built below the Falls for a similar purpose as the present steamboat of the same name, but proving at that time unprofitable, was safely navigated through them to the St. Lawrence.



THE WHIRLPOOL

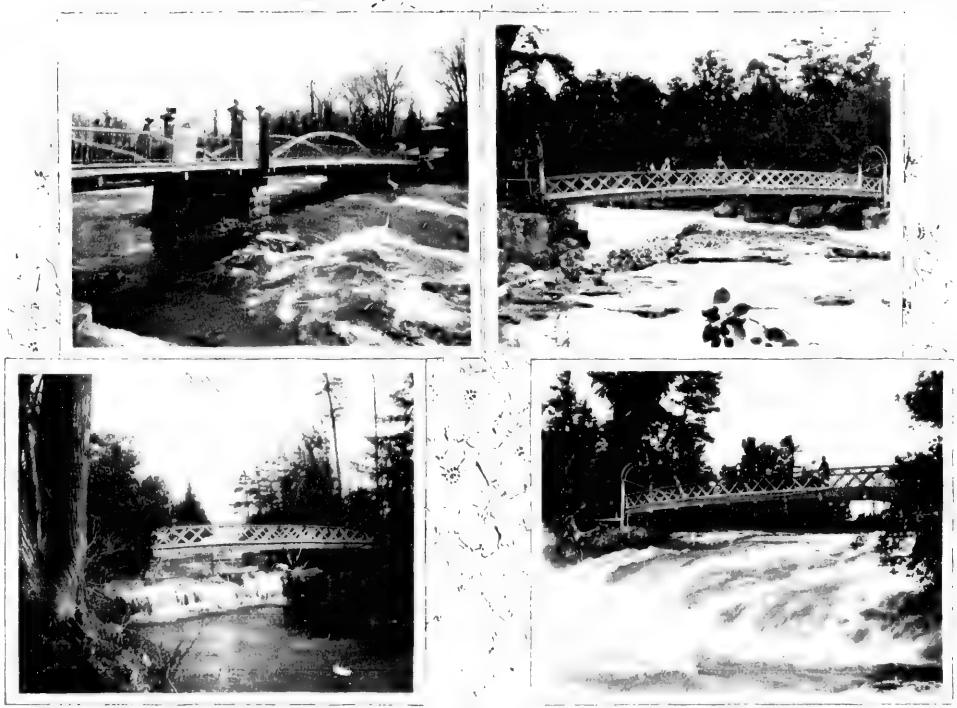
[illegible] the Whirlpool Rapids the river takes an abrupt turn to the right and flows at a direct right angle to its former course; in the apex of this angle [illegible] is the basin of the Whirlpool. Here the confined waters of the river, fresh from the rapids, impinge with great violence against the surrounding hills in search of a passage out, circling round and round in a dizzy dance which raises the centre of this maelstrom from ten to forty feet above the level of the river. Above the Whirlpool upon all sides, save only where it is broken for the narrow exit of the waters, towering cliffs rise to a height of three hundred and fifty feet, whose precipitous sides facing the river have become smoothed by the action of the water. Foreign bodies float amid the eddies of the pool for days before finding the pathway out; all is ceaseless motion, the enormous depths boiling and eddying incessantly. This is the final tumult of Niagara. The gorge extends yet farther to Queenston, some seven miles below the Falls, where it issues from the table-land through which it has cut its way to the present Falls, but there is no more obstruction and after emerging from its chasm at Queenston Heights the Niagara flows on placidly for yet another seven miles to join its waters with Lake Ontario.

THE ICE-MOUNTAIN

A peculiar feature of the midwinter landscape at Niagara is the ice-mountain, which rises just without the torrent of the American Fall. It is first formed in early winter by fragments of ice from the river above which have become detached and swept over the cataract. Here they are massed about the boulders at the very foot of the fall and rise in air as they accumulate, being cemented by the frozen spray from the caldron below. Often it rises to a height of one hundred feet. When first formed it is clear as crystal and of rough formation until after repeated falls of snow all its crevasses are filled and it takes on the appearance of the symmetrically outlined dome we present in this picture. From its summit one can approach nearer the descending flood of the American Fall than by any other means. On any bright winter day there is sure to be a gathering of people, bent on outdoor pleasure, about the ice-mountain, and a fringe of witnesses showing above the parapet of Prospect Park overhead

THE ICE-BRIDGE

The accumulating ice, still forming about the base of the ice-mountain, adheres piece by piece and pushes out into the river a stable ice-bridge toward the Canada shore. This formation is not an occurrence of every year, however, and its presence is enough of a novelty to be heralded throughout the country by press reports. The fact that such a formation of ice could withstand the violence of Niagara's current seems incredible, but it must be borne in mind that the surface waters of the river immediately below the cataract are comparatively calm, and but for the foam, present little appearance of their recent agitation. The torrent plunges beneath the surface and at a depth of from twenty to forty feet courses at a rate of fifteen miles per hour, while upon the surface, under ordinary conditions, the speed is but six miles per hour. This explains why timbers and logs which have come over the falls are rarely seen again until thrown up in the tumult of the Whirlpool Rapids. By this provision of Nature, also, the small steamboat, the "Maid of the Mist," is able to steam from her landing, just below Prospect Point, to the very face of the cataract, where her limited horse-power is sufficient to hold her so near the falling waters that her decks are drenched with spray

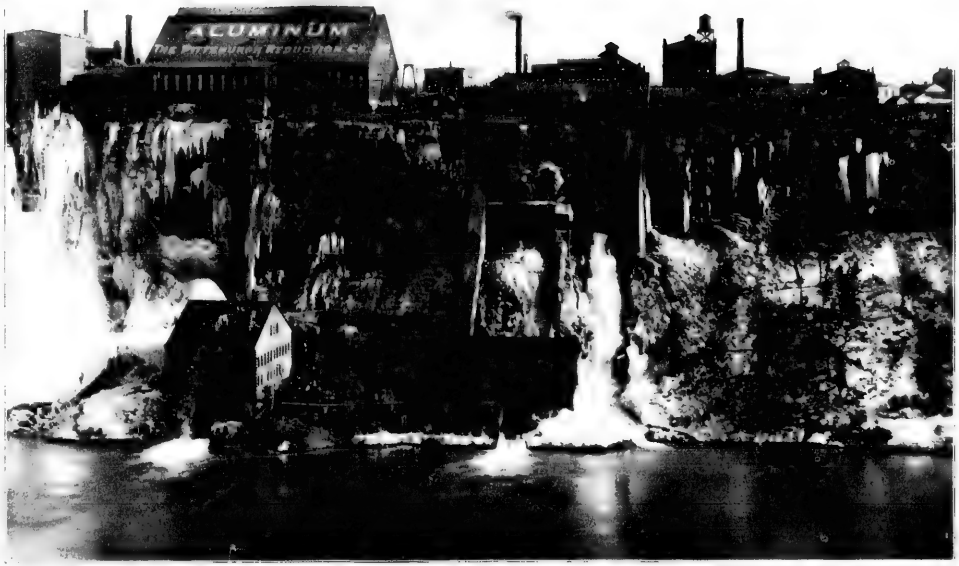


GROUP OF NIAGARA BRIDGES

One particular feature of Niagara is that, although such a powerful flood, capable of instantaneous destruction if once it overcapped its bounds, yet it may be closely approached with perfect freedom and without alarm. Numerous bridges span rapids of tumultuous power. They are extremely picturesque structures and form remarkably pleasant lounging places on a warm day. Overhung as they are by shade trees and crowded by the picturesque tumultuous waters, there is always present a stirring, grateful atmosphere. The system of foot-bridges connects all the principal islands of the cataract group with the American shore. The construction, particularly of that one which reaches from the shore to Bath Island, thence to Goat Island, was fraught with great hazard and difficulty, as it had to be thrown across the raging American Rapids, and before the cantilever principal of bridge building was discovered. From a massive abutment of timber, constructed upon the mainland shore, other timbers were thrust out and secured upon the shore abutment by immense quantities of stone, while from the other end long piles were thrust down into the river-bottom. Across this structure was carried a large caisson filled with stones which being sunk in the river formed the foundation of the first pier, of which there are three, all thrown out in the same manner.

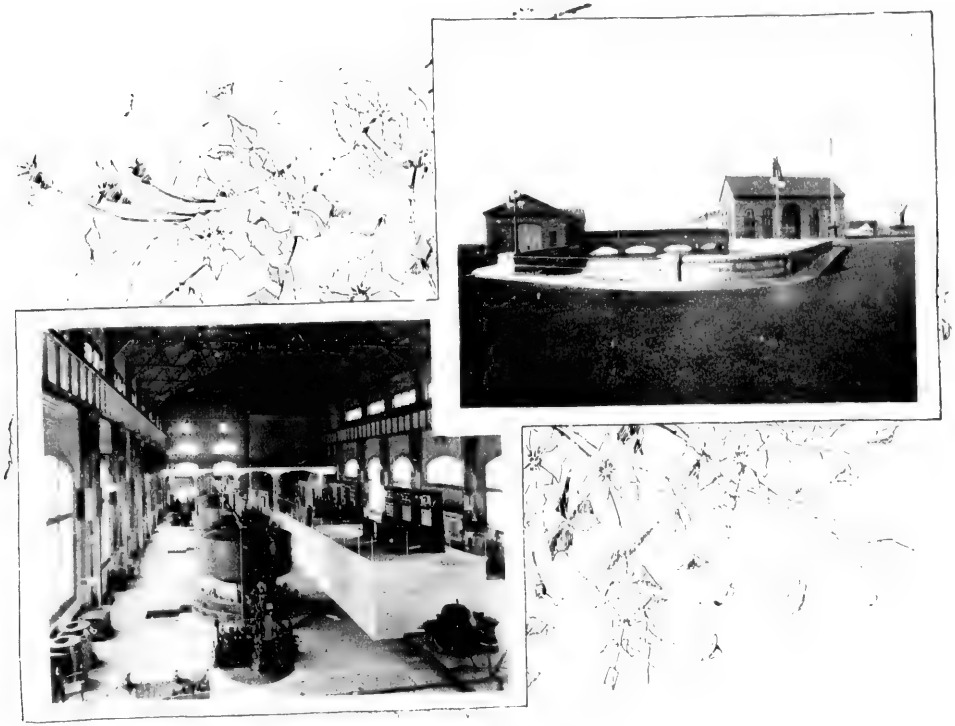
THROUGH THE GORGE BY TROLLEY—THE GIANT ROCK.

The Niagara Gorge is seven miles in length from the Falls to Lewiston, and its depth above the surface of the river increases from 164 feet at the Falls to seventy five miles below. Scientists differ in their estimate of the time required for the river to cut its way backward through those seven miles. The electric cars of the "Gorge Route" start from Prospect Park and enter the gorge a half mile above the railroad bridges; winding down a serpentine incline until reaching the river level. Here the gorge narrows, compressing the river into the limited bed of the Whirlpool Rapids. The tracks wind along beside these mad waters to the Whirlpool, with the precipitous, rocky walls of the gorge rising three hundred feet above. Some distance below the Whirlpool is Giant Rock, a monster boulder that stands apart from the mountain. Between it and the wall of the gorge passes the car. Winding along these rugged shores the tracks pass many interesting ravines, over streams, until finally under the earthworks of old Fort Gray, opposite which is seen the towering Queenston Heights, where stands the monument to General Brock, killed at the battle of Queenston in the War of 1812.



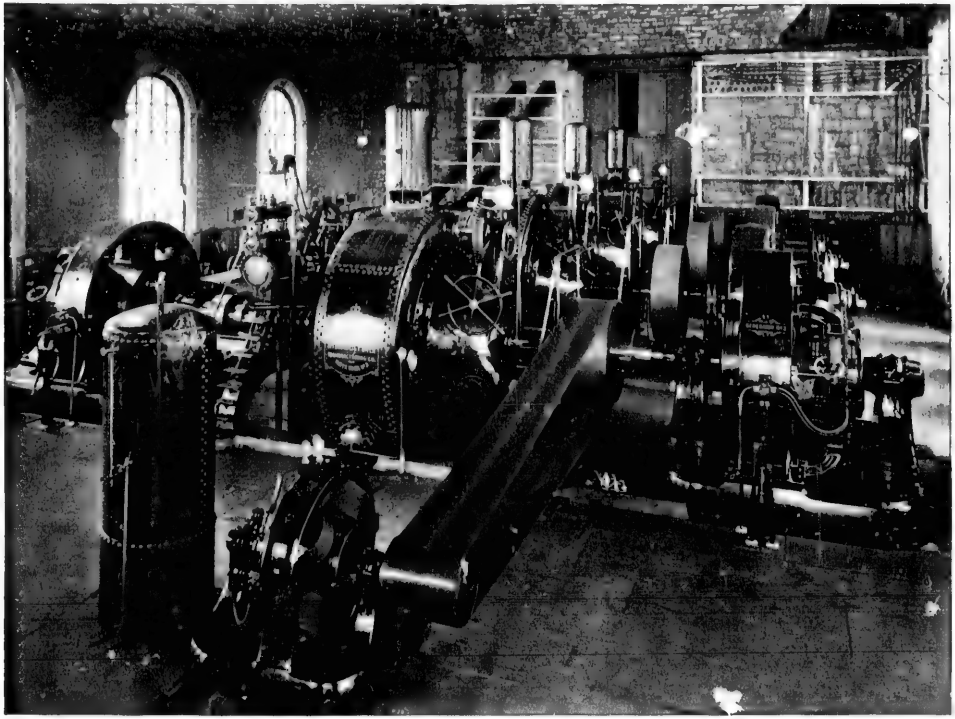
THE MILLING DISTRICT, NIAGARA FALLS NEW YORK.

Niagara's great future depends as much upon its growing reputation as a manufacturing centre as upon the attraction which the Falls themselves exert upon the tourist throng. A short time has passed since the two villages of Niagara Falls and Suspension Bridge, two miles distant, were separate communities, together containing a population of 10,000 souls. To-day they are one city with the former intervening space well built over with business houses and handsome homes, with a population of 20,000. The great factor in this rapid development has been,—what has been so keenly felt in many another section of our country,—electricity. The city of Niagara Falls now has manufacturing development of 50,000 horse-power in sight and 150,000 in anticipation. Based upon the population at the other great manufacturing centres of the country dependent upon their water-power advantages, when the total power of Niagara now in sight is completed the city should have a population of one and one-half millions. Who knows but this is destined to be the great industrial centre of the world, a city extending from Lake Erie to Lake Ontario? Already the city limits extend far beyond the suburban settlements and speculation in sites is most active.



POWER HOUSE EXTERIOR AND INTERIOR

It was in the year 1895 that the company was organized for the project, so widely heralded, of harnessing Niagara. Their plan comprised a surface canal 250 feet wide running on the river a mile and a quarter above the Falls, extending inwardly 1,700 feet, with an average depth of twelve feet, carrying water sufficient for the development of 125,000 horse-power. The walls of this canal, which are of solid masonry, are pierced at intervals with inlets guarded by gates. Some are used to deliver water to tenants putting in their own wheel and wheel-pits, and ten inlets are arranged on one side of the canal to permit delivery of the water to the company's own wheel-pit under this power house, where dynamos, placed at the top of the turbine shafts, generate electricity for transmission to near and distant points. At first three dynamos, each capable of producing 5,000 horse-power, were placed in position, and seven more of the same capacity are to be added as fast as completed. Since November, 1896, the people of Buffalo have been enjoying the unique distinction of transportation in cars propelled by the power of Niagara, more than twenty miles distant. With the full completion of the plant, 50,000 horse-power will be at command



POWER HOUSE INTERIOR

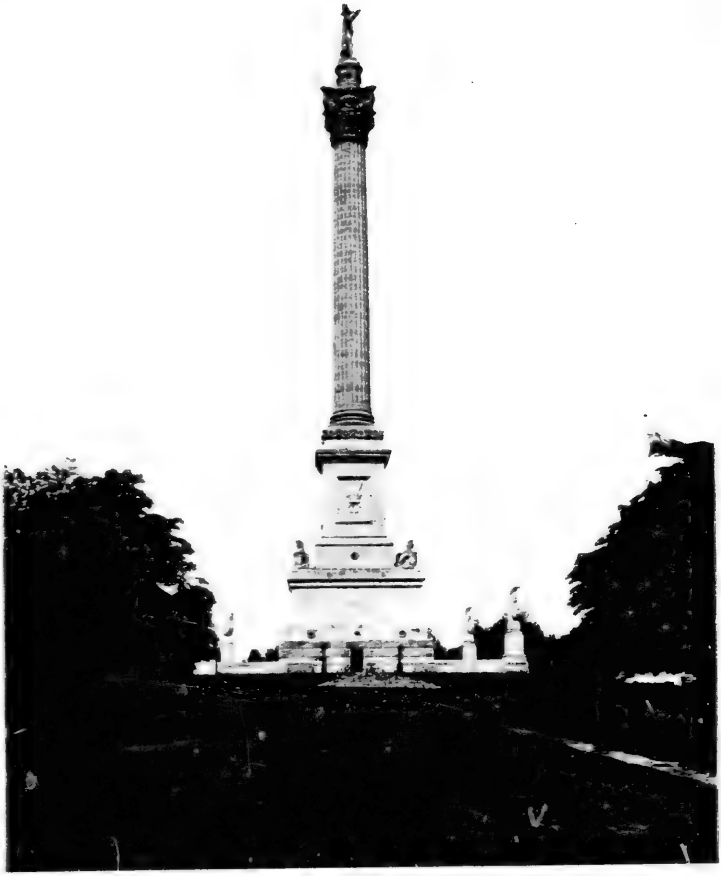
Part of the harness of Niagara is here shown, – interior of the power house, Niagara Falls Hydraulic and Manufacturing Company. It is not that late enterprise, however, which appeals most strongly to the senses as a subduing of the cataract. The water which turns the wheels for this concern is taken from the river a short distance above the rapids on the American side by a surface canal, through which it flows, a distance of 4,400 feet, to the milling district below the Falls, there falling through numerous tail-races to the bottom of the gorge. Ground was first broken for this surface canal in 1853, and in 1858 a canal thirty feet wide and six feet deep was finished. Disturbed financial conditions, occasioned by the War of the Rebellion, prevented the building of mills to use the water from the canal until 1870. Since that time building has been steadily active until at the present time it supplies 7,525 horse-power (water) and 5,105 horse-power (electric) to eighteen different manufactories. Two distinct methods were adopted for constructing the wheel-pits for these mills. In one a shaft was sunk some distance back from the edge of the gorge, in which the wheels were placed, and a tunnel driven from the face of the bank to meet the shaft for the discharge. In other cases a notch was cut in the edge of the bank and the wheels placed therein. This explains the different appearance of the tail-races as will be noted in our picture of the milling district

THE THREE SISTERS ISLANDS

From the southern or farther shore of Goat Island, where the current races to the Horseshoe Fall at a speed of twenty-eight miles an hour, [illegible] little islands [illegible] out in the river in one, two, three order toward the Canadian shore. [illegible] bridges were con[illegible] [illegible] at any one point. From the head of the farther isle of [illegible] the [illegible] cataracts [illegible] Goat Island across to the Canadian shore, varying from [illegible] to twenty feet in height. The bridge to the first Sister Island [illegible] the Hermit's Cascade, so called from the hermit of the Falls, Francis Abbott, who used to bathe in its waters. [illegible] contains much of beauty, much of grandeur [illegible] to the [illegible] them.

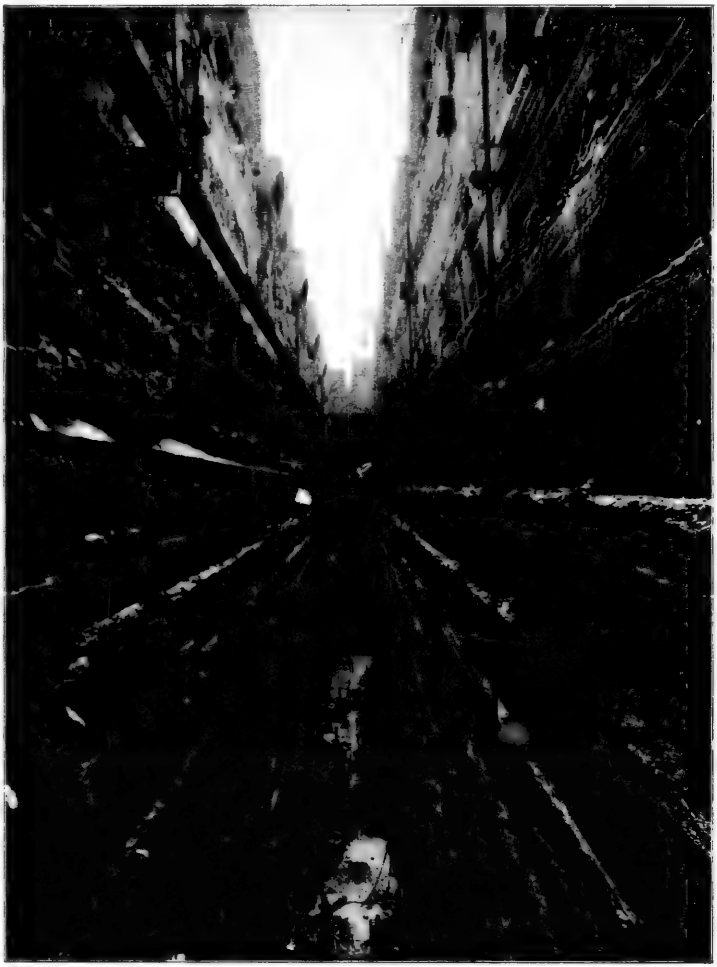
THE NIAGARA RIVER AND QUEENSTON FROM BROCK'S MONUMENT ON THE HEIGHTS

Below Queenston Heights, which holds the monument erected by the British Government to commemorate the services of Sir Isaac Brock, lies the beautiful village of Queenston, Canada, on the Niagara River, opposite the American village of Lewiston, New York. From the heights the road circles down the side of the mountain to Queenston, passing a tablet erected by the Prince of Wales to mark the spot where Brock fell, thence to the river's edge and the dock of the Niagara Navigation Company, whose steamers ply the lower river and Lake Ontario to Toronto. The view from this point is very beautiful. In the estimation of the Duke of Argyle the view from Brock's Monument was worth crossing the Atlantic to behold. The trip to Queenston by trolley forms one of the most popular Niagara journeys, which most fully illustrates the new order of things and the revolution in transportation methods wrought by electricity. What, before the advent of this [illegible], would have been a journey of time and much expense can now be accomplished quickly and at an expense of but a half dollar. The route extends along the very edge of the gorge, introducing one to views which would be impossible by any other conveyance.



GENERAL BROCK'S MONUMENT QUEENSTON HEIGHTS.

As is usual with border points so narrowly separated as are the United States and Canada, the whole course of the Niagara River holds much of historical interest in connection with the American Great Britain differences, particularly the War of 1812. This same may be traced back through the old French and English struggles for supremacy in North America, which culminated in the downfall of Quebec before Wolfe's victorious arms in 1759. In ye olden time a line of forts extended along the entire length of the river, and both the United States and Canada have outposts there today. A monument erected by the British Government to perpetuate the memory of General Sir Isaac Brock, who commanded the English forces at the memorable battle of Queenston Heights, stands upon the battle-field at that point, overlooking the Niagara River, eight miles below the Falls.

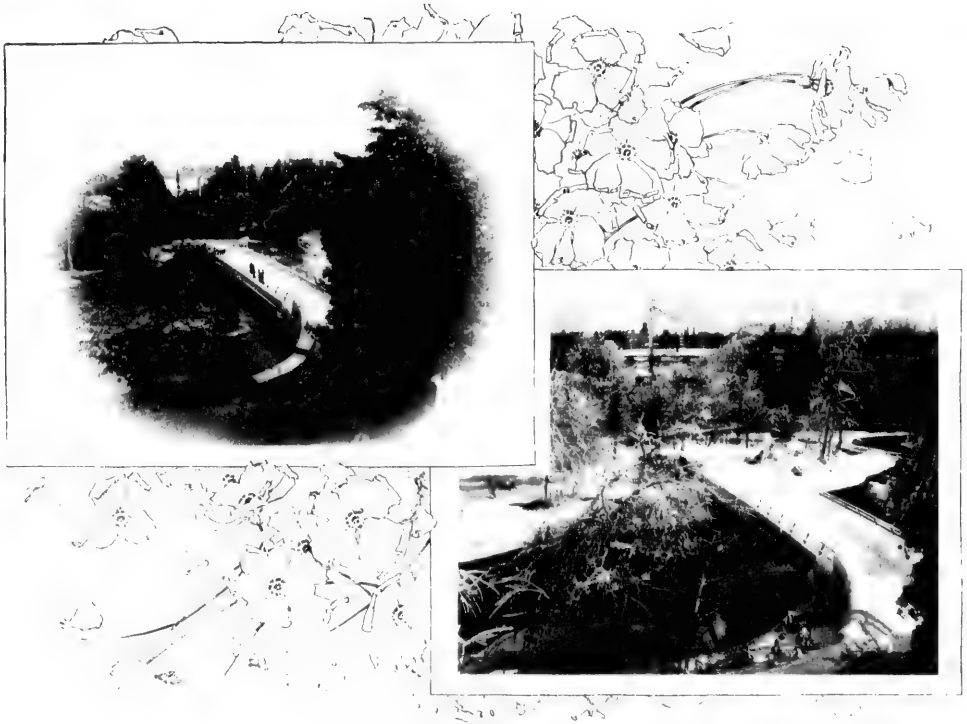


WHEEL PIT NIAGARA IN HARNESS

This wheel-pit, wherein is subjected the power of Niagara, is an excavation 178 feet in depth, and is connected with the main tunnel, which serves the purpose of a tailrace, 7,000 feet in length with a slope of six feet in one thousand. This tunnel is one of the most interesting and stupendous mechanical contrivances extant, most fitting adjunct to the Falls themselves. It is excavated from the wheel-pit, directly beneath the town, to a discharge into the river but a short distance beyond the "Maid of the Mist" landing at the foot of the gorge. The tunnel has a maximum height of 21 feet and a width of 18 feet, 10 inches, making a net section of 386 square feet. The slope is such that a chip thrown into the water at the wheel-pit will pass out of the portal in three and one-half minutes, showing the velocity of the water to be 20½ feet per second, or almost two miles per hour. In this great work [illegible] tons of material were removed; 16,000,000 bricks, 14,000,000 feet of lumber and timber were used, besides [illegible] cubic yards of stone, and 55,000 barrels of Giant American Portland cement, 12,000 barrels of natural cement, and 20,000 cubic yards of sand. Over one thousand men were engaged in the construction of this tunnel for more than three years.

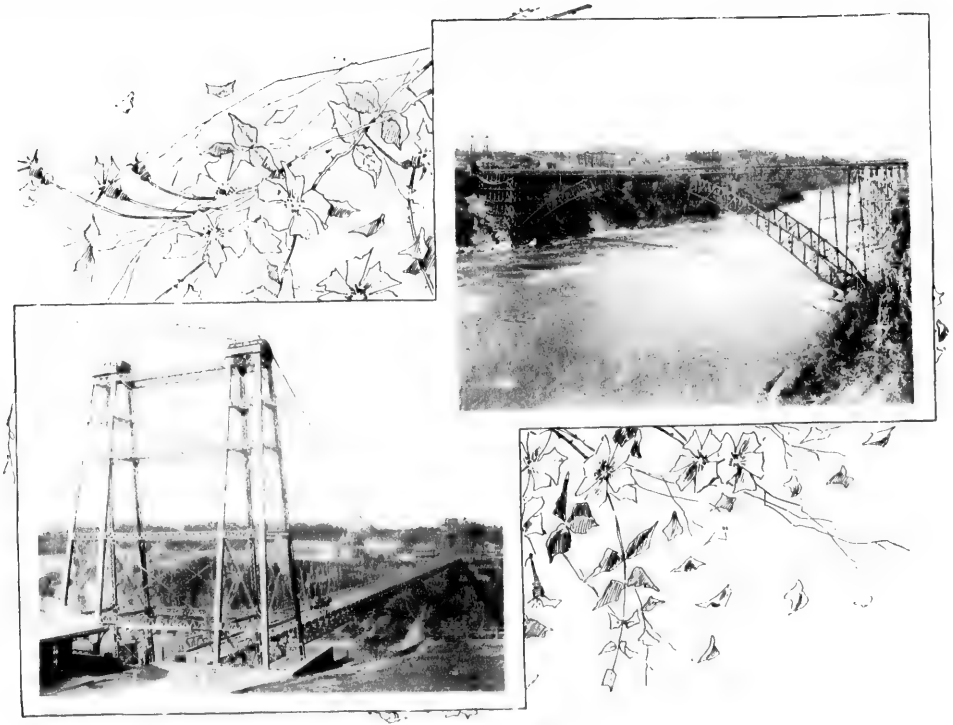
FALLS STREET, NIAGARA FALLS—LOOKING TOWARD THE CATARACT

The principal thoroughfare of the city of Niagara Falls terminates at Prospect Park and the river. For some half mile between it and the depot of the New York Central Railroad and the Falls it presents every appearance of a holiday town, for it is lined with cafes, hotels and attractive shops, and here, on the side of his chariot, Indian curios and souvenirs. It is with an increased sense of a coming sensation that one walks down the street toward the great cataract. When he enters the gate of Prospect Park this is intensified and he knows not what appearance the Falls will present to him. Soon, through the foliage appears a gleam of rushing water and in a few steps farther the whole display of Niagara appears from Prospect Point. It is all so grandiloquently near and familiar to the town. There is nothing exclusive about Niagara Falls. The place is thronged throughout the season with tourists who find every advantage afforded them to view the Falls and at little expense. Electric cars now convey to all principal view-points, and these with the reservation images have weakened the hold of the Niagara hackman on the public and relegated that rapacious individual to the background.



LUNA ISLAND BRIDGE – SUMMER AND WINTER

As no visitor to Niagara omits Luna Island from his programme of sight-seeing, everything has been done to make the approach to it as beautiful as worthy of that wonderful little isle. Without doubt, more tourists cross this bridge each season than tread any other pleasure-path in America. We present here two views, the summer and winter scene in combination. As may be readily seen, they are both from the same view-point. The lower or winter landscape is sharper in outline and permits a more comprehensive idea of the island's situation. In the distance appears the American shore with its great hotels at the water's edge. Immediately beneath is shown the long bridge across the river to Goat Island. This bridge, as well as Goat Island itself, must be traversed before one can reach Luna Island Bridge, for Luna Island, though nearer the American shore than its larger neighbors, is in very rapid water and on the very brink of the cataract. Beneath Luna Island Bridge flows the tremendous flood of the Centre Falls, whose torrent tore asunder the two islands in the numerous changes Niagara has made and is still making.

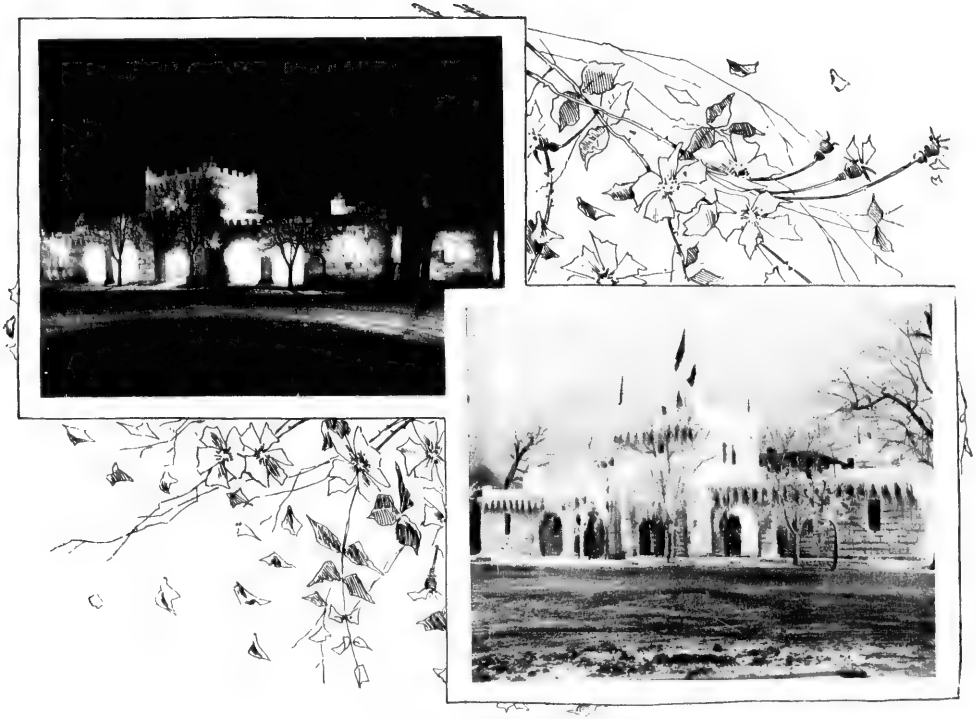


THE SUSPENSION FOOT-BRIDGE.

Visitors to Niagara Falls during the summer of 1898 will see, stretching across the gorge at this point, a magnificent new steel arch bridge in place of the structure shown in this picture. During the first week of April the main span of what is to be the greatest steel arch bridge in the world was sprung across the chasm and the work will be pushed forward rapidly to be ready for the summer of 1898. This new, all-metal arch is to occupy the site of the upper suspension bridge, close to the Falls, where it connects the two great free parks at Niagara. The distance from bank to bank at this crossing is 1,268 feet, very nearly one-quarter mile; the distance to the surface of the water, 190 feet. The length of the main span, 868 feet, will make the arch the greatest in the world, the next largest span being at Oporto, Portugal, where there is an arch which has a span of 566 feet. In width the bridge will be about 49 feet, and in the centre 23 feet will be devoted to a double trolley car track. On each side of the tracks there will be a roadway eight feet wide, and beyond the roadways there will be elevated walks for pedestrians three feet wide. When the arch is completed the suspension bridge will be taken down and transferred to Lewiston, there to be rebuilt on the site of the old suspension bridge destroyed by wind on April 16, 1864

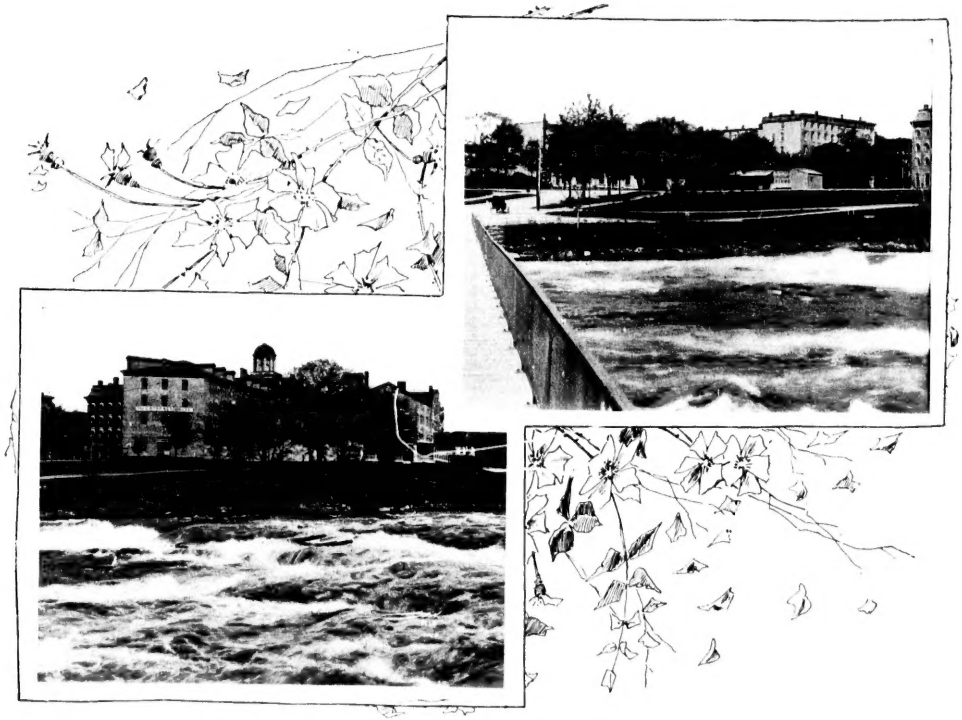
THE GORGE AND WHIRLPOOL RAPIDS

Viewed from the two railroad bridges, the narrow gorge, filled with the turbulent waters of the Whirlpool Rapids, leaping one hundred and fifty feet below, forms a scene never to be forgotten. The entire bed of the river is filled by the white, foaming torrent. Through this flood entire some sprits have in times past essayed to pass. It is the scene of several barrel episodes and also of Captain Webb's fatal swim, July 4, 1883. He had who had leaped from a steamship in mid-ocean to rescue a sailor; who had swum the English Channel naked; had startled America by swimming from Sandy Hook to Manhattan Beach during a storm which caused many vessels to seek harbor, and performed divers other feats of skill and endurance, succumbed to the power of these rapids. It is indicative of the wild appearance of the flood in the Whirlpool Rapids that many of the throng who witnessed the attempt doubted that the fiercest of the torrent had been attempted, believing that the swimmer had left the water at some advantageous point unobserved. This idle story was set at rest by the finding of the dead swimmer's body four days later floating upon the surface of the Niagara River below the Whirlpool, some five miles below the point where he lost his life.



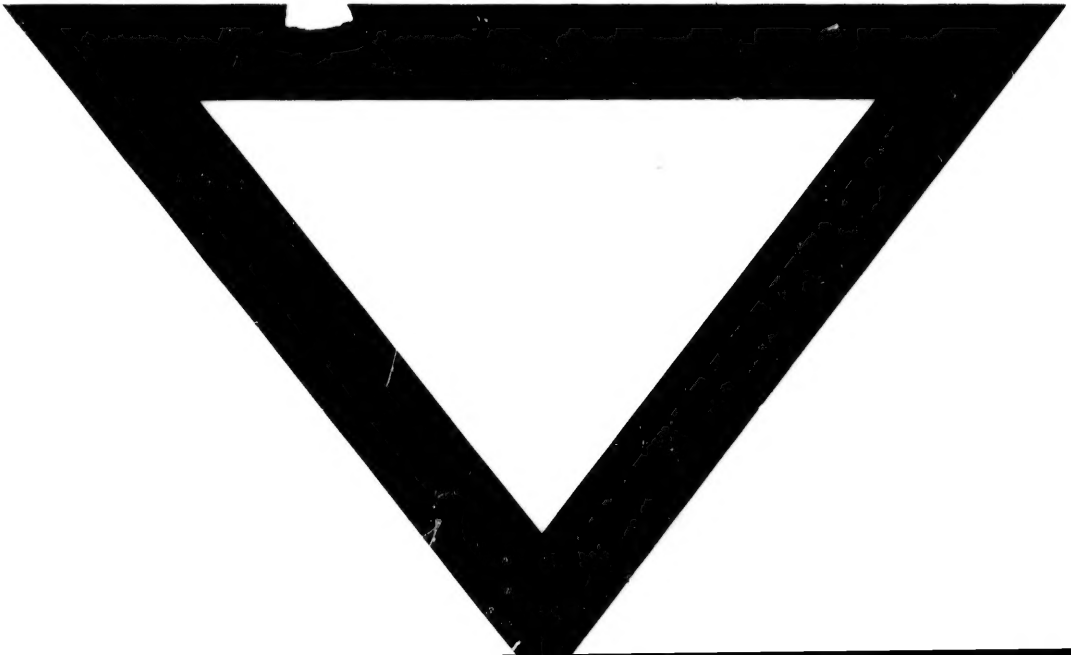
THE NIAGARA FALLS ICE PALACE OF 1898

Placed directly upon the brink of the Falls, or so near as the boundary of the New York State reservation would permit, electrically illuminated by power furnished by the cataract and filled with a merry party of skaters, the ice palace of 1898 proved a feature well worth commemorating. Certain it is that during the heated, humid days of July and August its recollection will be pleasing. It was during the winter carnival of 1898 that Niagara's first ice palace was erected. An area of one hundred and twenty by one hundred and sixty feet was covered by its gleaming walls of crystal, which were in many points seven feet in thickness. The entire structure was gay with bunting and flags by day and brilliant with electrical illuminations at night. A powerful search-light was placed three hundred feet out upon the structure of the bridge below the Falls, from whence it cast its powerful ray upon all points of interest, illuminating the ice palace and the cataract in a most novel and pleasing manner. Within the walls, booths for the sale of refreshments and fancy articles, as well as a grand ice rink and skating surface, attracted a numerous attendance.



TWO REPRESENTATIVE NIAGARA HOTELS.

In this book, which is published not at all for advertising purposes but as a souvenir of the Falls purely, no space can be given to the very numerous and excellent hotels which abound at this central point for tourist travel. It has been the publisher's sole purpose to present a series of pictures reproduced from the best photographs obtainable, the collection of which would require fifty times the price of this book, and to arrange them in order between these covers in compact, comprehensive and entertaining order. We cannot lay claim, however, to presenting all the points of interest about the Falls, if there is omitted those two American hotels which, from their long association with, have come to be such features of Niagara. They are the International Hotel and the Cataract House. The International can safely accommodate 600 guests, and during the months of July and August of each season, for nearly forty years, this popular hotel has been full. The Cataract House is one of the largest and oldest hotels in Niagara Falls. Part of the building was erected and opened as a hostelry in 1822. The hotel is situated nearly on the banks of the Niagara, having only the narrow part of the Park of the New York State Reservation between. The Cataract House can accommodate between 400 and 500 guests, and at times, in the busy season, every room is occupied by the best class of visitors that come to Niagara.

FROST-BOUND FOLIAGE. NIAGARA FALLS.

In bidding adieu to the Falls of Niagara one should ask one's self that question, which one hears so often propounded at the Falls,—"How did the cataract impress you?" Numerous are the replies to this query. Some are very susceptible to the beauties of Niagara; others lay great stress upon its power; while others, alas, express disappointment. The latter class are, we stand convinced, those who fail to push their investigation into every feature of the Falls. The series of pictures herewith includes photographs from both points of view; from the bottom of the gorge looking up toward the descending flood, as well as from the river level above the Falls. The only feature of Niagara which we have failed to catch and imprison here for the visitor's after-enjoyment is the roar of the falling waters, the tumult of noise which has been heard at Buffalo, twenty-two miles distant, and even as far as Toronto. This, however, is only during most favorable atmospheric conditions. Ordinarily the roar of the Falls does not prevent conversation even while in close proximity to the cataract.